

# Project Team Perception in Green Building Projects Implementation in Malaysia

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## Abstract

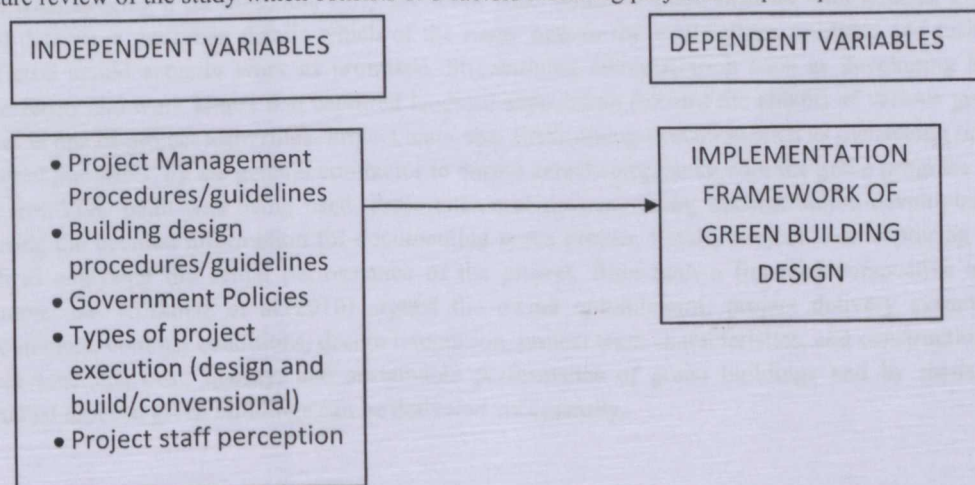
The purpose of this paper is to highlight Project Team Perception in Green Building Projects Implementation in Malaysia and its contribution to the success of Green Building Projects Implementation in Malaysia. The implementation of the green building projects depends on project team roles and responsibility in managing a Green Project. Project team is the core player in green building project implementation starting from planning, design, construction, supervision and maintenance. Project team roles and responsibility were investigated to have a significance degree of influence in green building implementation. Based on literature, 4 major factors have been identified as the major contributor to the Project Team Perception in Green Building Projects Implementation in Malaysia. The factors that are intended to be revealed such as Project Team Knowledge, Project Team Awareness, Project Team Experience and Ability Project Team adapting to change project management. This paper hopes to give and create a positive perception among project team in Green Building Projects Implementation in Malaysia.

## Keywords

Green Building, Green Building Projects, Implementation, project team, perception

## 1. Introduction

The construction industry is regarded as an essential and highly visible contributor to the process of growth of one country. Nevertheless, the adverse impacts to the environment lead to a growing realisation and acceptance throughout the world that there is a need for a more responsible approach to the environment. A strategy for sustainable construction is a significant milestone on the road to a more socially and environmentally responsible. It creates a framework within which the industry can make a strong contribution to the better future. Building sustainably has many merits but applying this concept is not easy as it requires changes to the old ways. Delivering sustainable construction requires action from all engaged in constructing and maintaining the structure or building including those providing design, consulting and construction services (Atkins, 2001). To increase the consideration to sustainability, the construction practitioners must be willing to change their behaviour in exploring new territory and willing to adopt new products, ideas and practices (Ofori et. al., 2000). Because of the merits and the growing interest on building sustainably, the race is now on for researchers and construction practitioners worldwide to put their best foot forward and initiate actions to reduce the negative impacts of development and sharpen their competitive edge. As global interest on sustainability has steadily blooming, Malaysia should not fell short in its attitude on sustainability and sustainable construction. Malaysia needs to demonstrate that it can abide by this new interest and can compete in the global market. Prime Minister of Malaysia, Dato' Sri Haji Mohamad Najib bin Tun Haji Abdul Razak has announce Malaysia commitment in United Nations Climate Change Congress 2009 (COP 15) in Copenhagen on 17 Disember 2009 that during 2020 Malaysia will reduce carbon emission rate up to 40 % from the current rate on 2005. In addition to the Prime Minister commitment green building initiatives in Malaysia is a concern that has received bigger attentions from government agencies, private organizations and the public at large for almost a decade now. The launch of National Green Technology Policy (NGTP) in 2009, focus on green buildings has intensified with the promotion of application of renewable energy (RE) and energy efficiency (EE), as well as the green building index .The building which we live, work and play interact with our environment, affecting stormwater run off, energy and water consumption, transportation patterns, and indoor air quality. Recognition of the role that buildings have in our environment has let to significant efforts to design, build and maintain more sustainable structures (Parris, 2010). Benefit of green building to the environment is save energy use at 24% up to 50%, CO<sup>2</sup> emissions 33% up to 39%, water use save 40% and solid waste reduction of 70% for each green building (Turner, C. & Franks, M (2008). Instead of benefit to the environment, green building also contributes to the building stakeholders by enhancing health and productivity, reduced environmental impact, environmentally effective use of materials, lowering electric and water utility costs and gives long term economic return. Project Team contributes to Green Building Projects Implementation in Malaysia. Project Team is on of the critical factors involve in addition to creates successful green building projects Implementation in Malaysia. The suggested Conceptual Framework for Implementation of Green Building in Malaysia for Government Building (figure 1) is derived from the analytical literature review of the study which consists of 5 factors including project staff perception.





(figure 1)

In relation to the title and suggested Conceptual Framework for Implementation of Green Building in Malaysia for Government Building (figure 1), the main purpose of this paper is to highlight and identify the causal factors that contribute to the Green Building Projects Implementation in Malaysia and addressing all the causal factors effectively to ensure the highly achievement of Green Building Projects Implementation in Malaysia.

## **2. Project team core player in Green Building Projects Implementation in Malaysia.**

Project team is the core player in Green Building Projects Implementation in Malaysia. The Project team are designers, project managers, supervision team, facility managers and building operators. Project team has multi-disciplinary professionals involves such as architects, mechanical engineers, electrical engineers, structural engineers, quantity surveyors and interior designers. Project team attributes are the key factors to improve green project performance. Ling (2002) mentioned that the good design team has the proper design capability and ability to interpret the client's needs. These attributes are essential because unless the design is right, a satisfactory building can never be produced (Kirmani and Baum, 1992). Selecting the 'right' team is considered critical to the success of any construction project (Mahesh et al, 2007). The optimal selection of a firm's professional composition should take place before a project is begun and this will enhance the probability of the team success (Paul and Carr, 2002). The total design of buildings today requires the involvement of a team of people with a range of relevant experience. This team may consist of the following consultants, architects, land surveyors, structural engineers, electrical engineers, mechanical engineers, hydraulic engineers, quantity surveyors. In design green buildings, a careful selection process which ensures that each member of the professional design team has demonstrated experience on design green building (Mahesh et al, 2007). The performance of designers is therefore important because any decision made at the inception of the project will effect project performance (Lukumon and Tham, 2007). Hatten and Lalani (1997) suggest that by selecting an appropriate design team, the chance of delivering a project on time and within budget will increase. Green Building projects Implementation success in Malaysia depends on the ability of the project team to execute green projects in Malaysia. The roles and responsibility of project team in execution of Green Building Projects in Malaysia such as making the decision to design the green building project, execute green building project after initial design work had already been done, integrating and aligning the existing project management procedure and guidelines with the requirement of the green building rating tools that is set at initial and design stage. In green building projects Implementation in Malaysia, finding brokerage representation that could genuinely support the marketing of a very different product, project team must work with stakeholders, project team also must be clear about the 'how'-learning how in integration design and development, where all professionals working collaboratively and the get-go and not in isolated, linear fashion, project team must clarify expectation with tenants-being a bit inflexible early on about what issues to stand firm on with tenants. Project team also must determine the green details which of the many new-to the world green products and technologies being proffered would actually work as promised. Streamlining administration such as developing lease proposals, lease forms and work letters that captured landlord expectation (toward the tenant) of various green compliance issues is one of project team roles. Project team also streamlining execution such as overseeing operations of and material purchased by the general contractor to ensure actual compliance with the green program (e.g confirming that low-VOC paint was being used). Project team also streamlining documentation-developing a process for capturing the detailed information for documenting green project. Finally project team capturing lessons learned such as analysing the actual performance of the project, from both a financial perspective and in terms of resource use. Korkmaz et al.(2010) argued the owner commitment; project delivery system, project team procurement, contract conditions, design integration, project team characteristics, and construction process might affect schedule, cost, quality, and sustainable performance of green buildings and by managing these non technical aspects, green buildings can be delivered successfully.

Li et.al pointed 19 specific success factors for managing green building projects into five major components, namely, human resource-oriented factors, technical and innovations-oriented factors, support from designers and senior management, project managers competence and coordinations of designers and contractors. Soonentag (2001) claims organizations become more interested in team performance than in individual performance.

### **3. Insufficient knowledge among project team creates negative result in Green Building Projects Implementation in Malaysia.**

Knowledge in project team is the key for the success in Green Building Projects Implementation in Malaysia. One of the major barriers mentioned by agencies is the lack of green design knowledge that internal and external decision-makers exhibit throughout the construction process (Grund, 2005). In addition, lack of education is often cited as major barrier to implement green design (Carlisle et al.2004), Shafiee,2005).Lee and Engbu (2006) cited that the importance of a knowledge project team has been indicated by (Othman et al, 2008). Being the originator of brief development, lack of knowledge of project team member it can be a considered source or a risk source for the green building project. This view is stated by Hatten and Lalani (1997) who suggest that by selecting an appropriate design team, the chance of delivering a project on time and within budget might increase. Design team must be equipped with the knowledge and tools that be able to translate into a design, the increasingly stringent environmental performance goals of clients and create buildings that meet these new objectives (Graham, 2000). Project team must have knowledge about what is actually green building, its method of designing ,implementation and maintaining the green building , green building scope of implementation, green building measurement and rating tool used and contribution of green building to the environment.This knowledge needed for all project team before execution of any green projects in Malaysia. After the project team acquired the required knowledge implementation the green building project it will leads to the positive perception among the project team in execution of the green building project. Design team acquired knowledge in designing the green building such as the basic green building function and scope, standards involve in designing green building projects and government policy involves in designing the green building projects and optimization of the design factors in achieving the required energy efficiency in green building. Designers also need to know what is the standard/guidelines used or available in the market in designing the green building projects. Besides that project team should understand what is the criteria required to design green building projects such as energy efficiency and water efficiency etc. Marsh (1999) mention that decisions made during conceptual design are considered to have the greatest influence on project performance and have the least associated cost. Without sufficient knowledge supervision project team at sites difficult to know what is existing rating tools used in supervising green building project such as GBI or PH JKR. Insufficient knowledge in Supervising project team also makes them difficult to understand the purpose and function of each rating tool towards green building projects implementation in Malaysia . Meanwhile , insufficient knowledge in maintenance team creates difficulty in maintaining green building equipment and innovation installed at green building projects site. The green building equipment and innovations installed in green building mostly is high technology and required specific knowledge and to maintain in. Project team needs green building knowledge in addition to make them understand the important and contribution of green building to the world, environment and society in addition to make them perform their task well in designing, supervising and maintaining the ion of green building projects Implementation. Shari, Z, Soebarto, V.I, 2012 explains one of the barriers to Sustainable Building Practices is project team members lack technical understandings. Around 14% of the barriers were related to all members of the core project terms including consultants, project managers, facility managers and building operators-who often did not have adequate technical understanding of knowledge to implement sustainable practices.



#### **4. Insufficient experience among project team creates negative results in Green Building Implementation Projects in Malaysia.**

Insufficient experience among project team in Green Building Projects Implementation in Malaysia gives negative results in Green Building Projects Implementation in Malaysia. Inexperience project team in executing or implementing Green Building Projects makes them unable to justify and execute green project management procedures and processes. Project team facing difficulty in designing, supervising and maintaining green building project without adequate experience. Inexperience project team face difficulty in imagining, knowing what is the required criteria in designing green building projects and the codes and standards use in designing the green building project. Inexperience designer fail to see what is required criteria and purpose in designing green building projects. Aniza Abdul Aziz (2008) pointed experience shows that green building place too much emphasis on good intentions as the design stage. Ling (2002) mention good design team must have the proper design capability and ability to interpret the clients's needs. These are essential because unless the design is right, a satisfactorily building can never be produced. Inexperience project team face difficulty in managing the sites, supervising all the green building equipment and innovations installation at site and monitor contractor and consultant work progress and installation. Inexperience project team having difficulty in knowing what is the best practise of installation for all the green building equipment and innovations. Project team without sufficient experience are not aware of integrating between rating tools and existing project management procedures. Besides that inexperience supervising project team difficult to monitor progress, cost and quality of installation accordingly to the project contract. Insufficient supervising project team difficult solving problem of installation green building sites. Green building equipment and innovations is latest technology equipment. Insufficient supervising and maintenance team will be difficult supervising the installation and maintaining the green building equipment and innovations. Lam et al.(2008) reported that a lack of practical understanding of sustainability has hampered the effective enforcement of legislation for sustainable construction. Shari.Z, Soebarto, V.I (2012) point out that some sustainability measures was not considered by project team members case by professionals are open for learning but have not had adequate training in it. In relation, inexperience project team difficult to monitor progress work, cost and quality of installation of the green building projects accordingly to the project contract expectations.

#### **5. Change Process from conventional construction project management procedure to the sustainable construction project management.**

Changing from conventional construction project management practices to green building/sustainable project management practices is another factors involve in creating positive perception of Project Team in Green Building Projects Implementation in Malaysia. Many of project managers and project team having difficulties to adapt and refuse to accept change to sustainable /green project management practices from conventional practices that have been used for decades. Nicholas (1994) suggested that the role of project manager is central to a project. Without the project manager, there would be no project. He summarised that the project manager is the glue that holds the project together. The literature emphasises the knowledge, skill and characteristics of project managers but these are not linked to or explained in terms of how these can influence the delivery of project success—and especially how project managers would be able to select appropriate combinations of knowledge, practice and behaviours that would support project success. As has been said by Pich, Loch, and De Meyer (2002, p. 1008), 'No conceptual model currently exists that enables project managers to understand why different approaches exist, which one to choose, and when'. None within the control of the project manager distinguish which levers project managers can pull to increase the likelihood of achieving a successful outcome for their project, or factors outside the control of the project manager. Nowadays project manager carry out not only traditional duty of project management but also manage the sustainable project management (Hwang & Ng, 2012). Project manager and project team one of the key factors to the success of green building projects Implementation in Malaysia. Inability and refusal of project managers or project team accepting change to sustainable/green project practices from conventional creates an impact to the green building projects Implementation in Malaysia. Project manager or project team must be flexible enough to accept change from conventional to sustainable/green project management practices. Ability project manager or project team adapting to change creates positive perception among project team and is the key factors to the success of green projects implementation in Malaysia.

## 6. Positive perception in project team leads ensure success in green building projects implementation in Malaysia.

Positive perception among project team is required to create a positive culture and attitude in green building projects Implementation in Malaysia. Project team must have positive perception and awareness on implementation of green building projects. Positives perception among project team gives better understanding to the client needs and executes their tasks better in green building projects implementation in Malaysia. Project team acquired positive spirit and enthusiasm to protect the environment by implementing green building projects. Positive spirit and enthusiasm creates from the knowledge about the contributions of green building to the customer, department, country, society and the environment itself. Negatives perception among project team that always occurs in Green Malaysia Projects is that the project team always felt extra green building project procedures are additional work /task and creates burden to project team to execute extra task. In addition to that, project team does not perform their task well. Positive perception among project team is important to creates positive culture , spirit, ethics and work environment in implementing green building projects in Malaysia. Pheng and Leong, (2000) pointed that a number of studies have been conducted to examine the influence of culture at the different levels(eg. National culture, organizational culture) on construction management practice. Meanwhile Liu and fellows(1999) claims there are difference between cultured of the different projects was involved in constructions projects. Positive perception in project team comes from well educate, knowledgeable and experience project team in green building projects.

## 7. Conclusion

Project team is the core player in in green building projects implementaion in Malaysia .To ensure the success of green building projects Implementation in Malaysia, positive perception of project team must be develop by giving proper knowledge, awareness, education, training and experience to all the project team. The awareness campaign need to be intensified to educate all the project team. Training such as green awareness, green building index, PH JKR, energy efficiency must be educate/train to the project team to gives knowledge in of green building projects implementation in Malaysia. Project team trained properly in existing green building projects to ensure enough experience is acquired before implementing green building projects in Malaysia. Knowledgeable and experience project team be able to monitor and manage green building project accordingly to the required time duration, cost and quality according to the required green building project contract . Male (1998) claims that projects that are completed on time can be indicator of an efficient construction industry. Implementation of green building projects in Malaysia is very impotance in addition to restore the environment for our future generations.



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